

ABSTRACT

Provided are a flue gas denitration catalyst having high denitration activity and capable of suppressing a side reaction, that is, oxidation of SO<sub>2</sub>; and a preparation process of the catalyst. The flue gas denitration catalyst comprises TiO<sub>2</sub>, WO<sub>3</sub> and 5 V<sub>2</sub>O<sub>5</sub>. In the surface layer of the catalyst within 200 μm from the surface thereof, V<sub>2</sub>O<sub>5</sub> is supported on a carrier containing TiO<sub>2</sub> and WO<sub>3</sub>. The supported amounts of V<sub>2</sub>O<sub>5</sub> range from 0.4 to 5 wt.% based on the weight of the surface layer and range from 0.1 to 0.9 wt.% based on the total weight of the catalyst. The V<sub>2</sub>O<sub>5</sub> thus supported has a crystallite size of less than 10 nm as measured by X-ray diffraction. The catalyst can 10 be available by preparing a mixture containing TiO<sub>2</sub> and WO<sub>3</sub> and having V<sub>2</sub>O<sub>5</sub> supported on the surface of an extruded product of the prepared mixture by a vapor phase method. The catalyst can be also available by having V<sub>2</sub>O<sub>5</sub> supported on a powder of the prepared mixture by a vapor phase method and having the resulting powder supported on the surface of a formed product.